

## Claims

1. A catalyst for gas-phase oxidations which comprises an inert support and, applied thereto, a catalytically active composition comprising from 1 to 40% by weight of vanadium oxide, calculated as  $V_2O_5$ , and from 60 to 99% by weight of titanium dioxide, calculated as  $TiO_2$ , and is obtainable by applying a suspension of  $TiO_2$  and  $V_2O_5$  particles to the support, wherein at least 90% by volume of the  $V_2O_5$  particles have a diameter of 20  $\mu m$  or less and at least 95% by volume of the  $V_2O_5$  particles have a diameter of 30  $\mu m$  or less.  
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- 10 2. A catalyst according to claim 1, wherein at least 90% by volume of the  $V_2O_5$  particles have a diameter of 15  $\mu m$  or less and at least 95% by volume of the  $V_2O_5$  particles have a diameter of 20  $\mu m$  or less.
- 15 3. A catalyst according to claim 1 or 2, wherein at least 50% by volume of the  $V_2O_5$  particles have a diameter of more than 2  $\mu m$ .
- 20 4. A catalyst according to any of the preceding claims, wherein the catalytically active composition further comprises, based on the total amount of catalytically active composition, up to 1% by weight of a cesium compound, calculated as Cs, up to 1% by weight of a phosphorus compound, calculated as P, and up to 10% by weight of antimony oxide, calculated as  $Sb_2O_3$ .
- 25 5. A process for producing a catalyst for gas-phase oxidations, in which a suspension of  $TiO_2$  and  $V_2O_5$  particles is applied to a fluidized inert support, wherein at least 90% by volume of the  $V_2O_5$  particles have a diameter of 20  $\mu m$  or less and at least 95% by volume of the  $V_2O_5$  particles have a diameter of 30  $\mu m$  or less.
- 30 6. A process according to claim 5, wherein at least 90% by volume of the  $V_2O_5$  particles have a diameter of 15  $\mu m$  or less and at least 95% by volume of the  $V_2O_5$  particles have a diameter of 20  $\mu m$  or less.
- 35 7. A process according to claim 5 or 6, wherein at least 50% by volume of the  $V_2O_5$  particles have a diameter of more than 2  $\mu m$ .
8. A process according to any of claims 5 to 7, wherein the suspension further comprises at least one cesium, phosphorus and/or antimony source.
- 40 9. The use of the catalyst according to any of claims 1 to 4 for preparing phthalic anhydride from o-xylene, naphthalene or mixtures thereof.